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comparison or analysis of this vote can be made to yield encouragement to the protectionists.¹

W. H.

TRADE UNIONISM AND THE EVOLUTION OF THE TYPE-SETTING MACHINE.

IN order to an understanding of the movement which is now on foot among the trade-union compositors in England in regard to the use of type-setting machines—a movement which in the last few months has caused almost as much stir in the composing rooms of the newspaper offices as the introduction of steam presses did among the hand-press men of two generations ago—it is necessary to have some idea of the evolution of the type-setting machine and the perfection which it has now reached. A good opportunity for tracing this evolution was afforded

¹ The votes, by states, on the respective bills were as follows :

STATES	McKINLEY BILL		WILSON BILL		STATES	McKINLEY BILL		WILSON BILL	
	YEA	NAY	YEA	NAY		YEA	NAY	YEA	NAY
Maine -----	4	--	--	3	Alabama ----	1	5	9	--
New Hamp.---	2	--	--	2	Arkansas ----	--	2	6	--
Vermont ----	2	--	--	2	Delaware ----	--	1	2	--
Massachusetts	10	2	3	9	Florida ----	--	1	1	--
Rhode Island	2	--	1	1	Georgia ----	--	6	11	--
Connecticut--	3	1	2	2	Kentucky ----	--	6	10	1
Total ----	23	3	6	19	Louisiana ---	--	3	2	4
New York ----	16	10	9	22	Maryland ----	3	2	5	--
New Jersey --	4	2	5	3	Mississippi --	--	6	7	--
Pennsylvania	19	4	8	19	N. Carolina --	2	1	8	1
Total ----	39	16	22	44	S. Carolina --	1	2	6	1
Ohio -----	14	4	10	10	Tennessee ---	2	5	8	1
Indiana -----	2	3	11	2	Texas -----	--	8	12	--
Illinois -----	11	1	11	11	Virginia ----	4	--	9	--
Michigan -----	9	--	5	7	West Virginia	2	--	4	--
Wisconsin ---	6	2	6	4	Total ----	15	48	100	8
Total ----	42	10	43	34	California ---	2	--	3	4
Iowa -----	10	1	2	10	Colorado ---	1	--	2	--
Kansas -----	5	1	5	3	Idaho -----	--	--	--	--
Nebraska ---	2	--	3	3	Montana ----	1	--	--	1
Missouri ----	2	2	14	2	Oregon -----	1	--	--	2
Minnesota ---	5	--	3	4	Nevada -----	--	--	--	1
N. Dakota ---	1	--	--	1	Washington --	1	--	--	2
S. Dakota ---	2	--	--	2	Wyoming ----	--	--	1	--
Total ----	27	4	27	25	Total ----	6	--	6	10

Total for McKinley Bill, 152; against, 81.

Total for Wilson Bill, 204; against, 140.

at the World's Fair. The number of type-setting machines at work in Machinery Hall was not large. There were only four, all of American invention and American make; but in these four machines nearly every stage in the development of type-setting by machinery was represented.

First came the Thorne, whose inventor has adapted his machine to the ordinary movable types long in use by compositors. Next came the machines of Mergenthaler and Rogers—of the two inventors who boldly struck out in a new direction and hit on the idea of casting lines of type on slugs. After the slug-casters came the most recent of type-setting machines, the Lanston, whose inventor has successfully combined the ideas of the earlier inventors of type-composing machines both English and American, and has constructed a machine using single types like those in use by the ordinary compositor, but newly cast for each letter and punctuation mark used in putting a line of copy into type.

Only one machine was wanting at Chicago to illustrate fully the evolution of type-setting machinery. This was the machine known in England as the Mackie. For ten years it has not been seen in use outside the town of Warrington, the home of its inventor, and it is not now claimed for the Mackie machine that it was ever an economic success. If the Mackie machine had been at Chicago, its chronological place would have been at the head of the series. Then it would have been possible to measure the progress of the last twenty-five years in the development of type-setting machinery, and also to realize the degree to which the same idea has actuated two inventors, one working in England and the other in America, at an interval of a quarter of a century.

Like the Mackie type-setter, the Lanston, the newest of the American machines, consists of two parts which are worked independently. On one machine paper is perforated, and in the other, through which the perforated paper is worked, the types are cast. In the Mackie machine, the perforation, the brain work of the process, is done on an instrument constructed almost exactly like a piano, and the perforations appear on a roll of paper of about an inch in width. This perforated paper is then put into the type-setting machine, and, by means of the perforations, types are dropped on carriers and then delivered in long lines. Justification into column widths is afterwards done by hand in the same way as with the Thorne machine, the only American machine now in use which works with ordinary type. In the Lanston a machine built on the plan of the type-writer takes the place of the piano-like instrument in the Mackie machine, and instead of the second machine

with the carriers and type-cases, there is a type-casting machine with a set of dies corresponding to the letters and numerals of the perforator. The type is delivered in column widths. The two sections of the Lanston machine are quite independent.

Three of the four machines exhibited at Chicago are in use in England, and it is one of these, the Mergenthaler, or Linotype, which has brought about the present movement among the English union compositors. The Lanston machine has not yet been introduced into England. When it is introduced there it is likely to make as much stir among the book-work compositors as the slug-casters are now causing among the men engaged in newspaper work.

In tracing the evolution of type-setting machinery and the reception which has been accorded it by organized labor, it is important to note the point at which the English printers began to take the machines into consideration, and to define their attitude and policy towards them. The Mackie machine was never permanently at work in an office in which union printers were employed. It was always worked by girl labor. Compositors were interested in it; but at no time did they regard it with uneasiness. Other machines of about the same or a little later date have been, and are still being, tried in England. Some of these are at work in the *Times* office, London; but the *Times* has always been produced by non-union labor, and the use of the machines in Printing House Square never aroused much active interest among the union compositors of London. In fact union printers do not seem to have felt any uneasiness so long as the inventors of type-setting machines confined their attention to the handling of ordinary type. It was with the advent of the slug-casters that they began to be apprehensive of the changes which machines would bring about in the composing room.

The Linotype, the first of the slug-casters, was introduced into England in 1887; but it was not until July, 1893, that the printers' unions admitted that copy could be put into type by machinery cheaper than by hand, and that they determined upon their policy towards the machines. A memorial was then addressed to the Linotype Company by the executive council of the Typographical Association, an organization embracing nearly all the union printers of provincial England.

The memorial was addressed to the company with a view to securing its help in making terms with proprietors of newspapers into whose offices the machines are being introduced. "We can quite see," reads this memorial, "that in the final settlement of wages and working con-

ditions, we must look rather to the users than the sellers of these machines, but we believe that your representatives will be able to exercise a beneficial influence when introducing the machines by bringing under the notice of employers the reasonableness of the following suggestions." Then follow six suggestions. The first of these was for the adoption of a scale of piece-work. The second asked that operators working the machines at day-wages should have an increase of ten per cent. on the wages paid to ordinary compositors. The third was that learners should be guaranteed at least the usual day wages during their first three months on the machine. The fourth was that an eight hours day should be the rule for machine operators. The fifth asked the company to encourage as far as possible the engagement as operators of compositors displaced by the machines; and the sixth, that the company would discourage task work and the offering of bonuses and premiums to promote racing by operators.

In return for the recognition of these principles the association offered the company a frank and honest recognition of the Linotype machine. "The time seems to be approaching," concluded the memorial, "when it will be a question not only of society and non-society men, but also of society and non-society machines. The Linotype answers to one of the essential conditions of trade-unionism, in that it does not depend for its success on the employment of boy or girl labor, but, on the contrary, appears to admit of being fairly and honestly worked, with advantage to employer, inventor and workmen."

The rate of wages which the Typographical Association is asking for its men when put to work on type-setting machines is significant. It is based on the existing piece rates for ordinary composition. For type for which the English compositor now receives sixpence per thousand ens, the union is asking that the machine operators shall receive twopence halfpenny. The reference to boy or girl labor is the keynote to much of the old indifference of union compositors to any machines which depend for their economic success on cheap labor of this class. Much of the work on newspapers is done late at night, and in England the Factory Laws prohibit boys and women from working after eight P. M. It has thus come about that in the morning newspaper offices, where type-setting machinery is in use, adult labor has had to be employed for all work in connection with the machines.

These suggestions were put forward in July last. During the next four or five months type-setting machines and the effect they are likely to have upon the trade were discussed by all the branches of the

Typographical Association, and as the outcome of the discussions, a conference was held at Sheffield in December, attended by delegates representing nearly eleven thousand union printers. At this meeting it seemed to be generally agreed that it was now no longer a case of machines or no machines; but rather of machines operated by union labor instead of machines operated by non-union labor. The attitude of the various branches towards the machines was practically the same as that assumed by the executive council and explained in its memorial of July. But among some of the branches there was a disposition to push for better terms than those sought by the executive. One of the branches urged that six hours should constitute the working time for men engaged on the machines at night. Several branches insisted that piece work on the machines should be absolutely prohibited. Others endorsed and emphasized the action of the executive council in seeking to prevent the payment of bonuses for quick work, and the Manchester branch, which has more than 1800 members, went so far as to insist that any operator receiving a bonus or other remuneration on his output from the composing machine manufacturers or their agents should be expelled from the association. Another branch, while willing that union men should act as operators, was anxious to protect the ordinary compositors at work in offices where the machines are used. To this end, and to prevent discrimination in favor of the machines, it was suggested that the owners of newspaper offices using the machines should be called upon to guarantee each compositor engaged at case six and a half hours composition on piece work, and payment for all standing time on a fixed weekly wage basis.

The union compositors are evidently willing to adapt themselves to the new conditions the machines are bringing about. All that seems to disturb them is the terms; and it is in regard to these that trouble is likely to arise between the union and the newspaper publishers. The publishers are introducing the machines not with a view to getting better work, but solely in order to effect economies in the most expensive department of newspaper work. It is now admitted that some saving can be effected by the machines, and it is not likely that the newspaper owners will go to the expense of revolutionizing their plant and then allow the compositors' unions to determine what the saving by the change shall be.

In regard to learning to operate the machines, the attitude of the Typographical Association is noteworthy. It has issued orders that compositors engaged on ordinary work must not use their leisure in

learning to operate the new machines. If they do, they will be expelled from the association, under the rule which governs unfairness to fellow workmen and disloyalty to the Union. A special circular warning union compositors against conduct of this kind says: "Members can only accept positions as learners on the understanding that they are to be paid the stab wages of the branch." The intention of the association is that employers are to bear the entire cost of teaching a man what is practically a new trade.¹

FARMINGTON, CONN.

EDWARD PORRITT.

¹The attitude of Union compositors in the United States toward type-setting machines is somewhat different from what it is in England, as presented by Mr. Porritt. The Union favors having its members learn to operate the machines, and does not expect them to secure full wages while learning. Section 160 of the General Laws reads:

"It is the sense of the International Typographical Union that members of subordinate Unions should learn to operate type-setting machines wherever in use in offices under the jurisdiction of subordinate Unions."

The efforts of printers in the United States are directed to securing a shorter work day where machines are introduced. On this point the International Union declares that the hours shall be shortened as far as possible—eight being the maximum. (Sec. 138, *General Laws*, 1892).

In cities where the machine question has arisen there is a scale for beginners and a scale for regular operators. The scale for beginners is designed to apply to compositors, and consequently the time for learning is short. The following is from the agreement between the Chicago Daily Newspaper Association and the Chicago Typographical Union:

"Learners shall be paid \$15 per week for a period not exceeding six weeks, or until, if paid by the piece, their earnings shall be equivalent to the above-named sum, when they shall be considered competent operators. A week shall consist of six days, of eight and one-half hours each."

The scale for competent operators is \$24 per week on morning papers and \$21 per week on evening papers. The arrangements are essentially the same in other cities, except that the time for learners is often longer than six weeks. The Linotype Company allows members of the Union to learn to operate the machines free of charge at the company's headquarters in Baltimore, and many avail themselves of the opportunity, and are sent out with new machines as experts when qualified.

The *Typographical Journal*, the official organ of the Typographical Union, under date of January 15, gives a table showing the displacement caused by machines. Reports from 68 cities in which type-setting machines are in use show that there are 999 machines in 132 offices. In these offices 4,649 compositors were employed before the machines were put in and 2,613 afterward—a displacement of 2,036 compositors. This is a displacement of less than one man in two caused by the introduction of machines—a smaller proportion than generally estimated by those who feared the introduction of machines would be disastrous to compositors.—[EDITOR].